

RESPONSIVE CLOSE AIR SUPPORT

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A-10C Thunderbolt II is first aircraft designed to provide close air support of ground forces

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2012		2. REPORT TYPE		3. DATES COVERED 00-00-2012 to 00-00-2012	
4. TITLE AND SUBTITLE Responsive Close Air Support				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Defense University, Joint Force Quarterly, 260 Fifth Avenue, Building 64, Fort Lesley J. McNair, Washington, DC, 20319				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 6	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

In May 2011, International Security Assistance Force Commander General David Petraeus said the responsiveness of close air support (CAS) in Operation *Enduring Freedom* (OEF) went from “great to exceptional” in the previous year. He further stated, “The traditional standard had been 12 minutes from the time assets are requested to when they are on station. Recently the average response time has fluctuated around eight minutes.”¹ This reduction applied specifically to “troops in contact” (TIC) situations where ground forces request CAS. Ground forces request CAS when their organic assets cannot handle the situation. In practical terms, this means aircraft are normally responding where ground forces are receiving accurate fire. Four minutes can seem like an eternity to a soldier in the middle of a complex ambush. Aircraft arriving even a few seconds earlier can make the difference between life and death.

Numerous agencies and people contributed to this success story, but a great deal of credit belongs to three U.S. Air Force (USAF) captains and a Royal Air Force flight lieutenant² at the Air Support Operations Center (ASOC) in Kabul. Their leadership as Fighter Duty Officers (FDOs) in charge of their respective shifts in the ASOC directly resulted in the increased responsiveness that General Petraeus lauded. They motivated their crews of highly skilled Airmen to reduce the historically acceptable 12-minute response time to TIC situations. Command and control of airpower in a complex combat environment is not easy, yet they saw the potential for improved support to the coalition's fielded forces and fought to provide it. As the campaign in Afghanistan enters its drawdown phase, an examination of how they achieved this dramatic decrease is appropriate.

Fundamentally, improved responsiveness happened because these Airmen left no rock unturned in their pursuit of better supporting their comrades in arms. No single line of effort produced this change. Multiple lines of effort simultaneously contributed to success. Of note, some great ideas did not come to fruition due to technical, bureaucratic, financial, and other barriers. Other initiatives turned out not to be great ideas after all. Five lines of effort, however, proved particularly fruitful.

Build Relationships Based on Trust

A quick survey of the doctrinal Theater Air Control System/Army Air-Ground System (TACS/AAGS)³ shows that the system is a network of relationships. Each agency has an important role in the overall success of the system. The fielded version of the system in Afghanistan is far more complex than the doctrinal model. Geography, coalition command structures, the presence of civilian air traffic in the battlespace, and equipment shortfalls all contribute to the nondoctrinal aspects of the command and control structure. Multiple regional commands led by

intent. Establishing personal relationships leads to mutual understanding of each organization's capabilities, limitations, and purpose. Once ASOC and fires personnel establish a relationship that facilitates open exchange of priorities and compromises required to achieve given priorities, both parties can work together to best achieve the commander's intent. A strong personal relationship with fires officers allows FDOs to explain the compromises involved in fulfilling a particular air support request when they predict excessive impact to achieving the commander's intent. Each situation will

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different Services and nations introduce even more boundaries and relations that are not depicted on any hierarchical organizational chart. In effect, an ad hoc command and control network is overlaid on the basic doctrinal framework. The result is that personal relationships serve as vitally important “grease” to keep the command and control structure functioning smoothly.

Relationships are better built face to face. A phone call or email can start a relationship but nothing replaces actually meeting counterparts and seeing firsthand where they work. The four officers mentioned above traveled widely throughout the area of operations (AOR) and forged relationships that repeatedly helped shorten CAS response times. Building a relationship in person allows both sides to understand each other's environment, capabilities, and limitations. Details as simple as knowing seating arrangements in the Combined Air Operations Center (CAOC) can slice minutes off response times. When a phone is busy during a TIC situation, knowing which of your contacts is close enough to tap the busy party on the shoulder and speed the process can save lives. Cultivating close relationships across organizations requires time and effort but it pays off when the chips are down.

From the ASOC perspective, three relationships stand out in importance:

ASOC—Fires relationship. First, the ASOC relationship with the corps staff (particularly the corps fires staff) is exceptionally important in creating the flexibility to meet the ground force commander's (GFC)

be different, but having open lines of communication at the personal level allows for quick, intelligent adjustments to air support requests and aircraft taskings. Time spent building a good relationship assures both sides that each is working to maximize their assets' contribution to the common effort.

ASOC—Combined Air Operations Center relationship. These two organizations interface at multiple points. While numerous publications detail the formal structure of this relationship, strong personal relationships allow each organization to maximize its contribution to the fight. The most important interface is between the ASOC director and the chief of combat operations (CCO). The ASOC director commands the ASOC and is responsible for the actions of all ASOC crews. The CCO directs operations on the CAOC floor to ensure effective use of airpower assets. This relationship sets the tone for all other interactions. Frequent dialogue between these individuals allows each to provide direction to their organizations that speeds the exchange of information required to reduce CAS response times. As with any two distinct organizations, friction will occasionally develop as each strives to achieve its own mandates, but strong personal relationships allow both sides to move beyond these instances to expedite CAS response times. The FDOs' relationships with the numerous CAOC desks they deal with fall under the umbrella of this larger relationship. Routine communication between the FDO and multiple duty officers (DOs)—for example, CASDO, Tanker DO, and others—at the

CAOC keeps both sides in the loop when changes in the plan are emergent. When these relationships are mutually trusting, time is not wasted trying to figure out why a change is being made. Instead, time and effort is focused on finding the best solution to the challenge at hand. Good ASOC/CAOC relationships at the DO level allow peers to share workload and anticipate each other's moves when time is of the essence.

ASOC—Marine Aviation Command and Control System (MACCS) relationship.

Future campaigns may or may not result in the TACS/AAGS and MACCS working as neighbors. However, the lessons learned by working along this boundary apply whenever two similar, but not identical, command and control systems interface. While internal communications and relationships are important, relationships along and across seams and borders cannot be overlooked. Actions occurring at borders between command and control systems are potentially sources of significant delays if the people operating both systems are not familiar with each other. Due to cultural and Service differences, these relationships may initially require more effort to cultivate, but they are absolutely worth it.

The addition of Regional Command Southwest (RC-SW) in 2010 significantly changed command and control relationships for both ground and air forces in Afghanistan. The ASOC and elements of the MACCS experienced predictable growing pains during this transition. Working relationships were lukewarm at best through early 2011. Philosophical differences regarding the best way to integrate airpower into ground operations, high turnover rates, and different definitions of the same terminology all contributed to less than optimal CAS response times along the boundary between the U.S. Marine Corps (USMC) and USAF command and control systems. Numerous telephone-brokered agreements improved the flow of airpower assets between the two systems but significant improvement eluded both sides until Airmen visited RC-SW and Marines toured the ASOC in Kabul. ASOC personnel learned how aircraft are handed off inside the MACCS system; this allowed them to contact the right agency to quickly recall Combined Forces Air Component Commander (CFACC) assets into the TACS system in response to immediate CAS requests. Conversely, Marines saw the



Air Force air liaison officer calls in A-10C II Thunderbolts for close air support in Afghanistan

U.S. Air Force (Rebecca Garland)

impact that an unreliable air picture had on ASOC operations and they were able to frame future requests in a manner that expedited responses. However, the most important outcome of these exchanges was mutual trust. Parochial mistrust disappeared once operators on both sides clearly

saw that each desired to provide the best possible airpower support to fielded coalition forces. The time and effort spent to build relationships across the command and control seam paid huge dividends and allowed for the codification of procedures that mutually benefited all parties.



U.S. Army (Jason Fetterolf)

Marine AH-1W Super Cobra during close air support training, Kuwait

The Air Tasking Order Is a Baseline

A cautionary disclaimer is in order before describing the role of ASOC in executing the CAS portions of the air tasking order (ATO) in OEF. The following discussion details how the FDOs managed the ATO to achieve the GFC's intent but the extent of their actions should not be extended to other mission types. The actions they took and the mindset that accompanied their actions were very effective in the OEF context. The same types of actions in other missions areas or in a broader campaign could have significant negative operational and strategic impacts.

Command and control of airpower in a CAS-centric environment is art aided by science. The ATO is built using inputs from the ground component and therefore positions airpower assets to contribute to achieving the GFC's objectives. In a CAS-centric air campaign, the plan laid out in the ATO provides the palette FDOs use to meet the GFC's intent. Just as ground forces continuously modify their actions during execution in response to weather, enemy actions, logistics delays, and myriad other factors, FDOs modify the CAS plan after the

ATO is published. Changes made after ATO publication are not made in a vacuum nor are they indicative of flaws in the process used to produce an ATO. Ground forces routinely cancel, reprioritize, or reschedule operations that the ATO supported with dedicated CAS missions. FDOs are normally collocated with the corps staff, which enables the relationships described above, and allows them to coordinate in real time to adjust the flow of CAS assets. The systems used by both ground and air planners to build the ATO are extremely complex and represent a scientific way to account for as many factors as possible when allocating scarce resources. FDOs apply art to the CAS portion of the ATO in order to actively manage a four dimensional mosaic of CAS assets throughout an ATO cycle.

In practice, FDOs started "reflowing" 20 to 80 percent of the CAS ATO each night to better support evolving ground forces actions. All elements of the TACS did not initially receive this notion well. The magnitude of change produced significant heartburn in some quarters, but the immediate drop in response times shielded the FDOs

from backlash. Luckily, success is hard to argue with, and their results afforded them the leeway to refine the process until it produced the 33 percent reduction in response times lauded by General Petraeus. The ATO serves as an important baseline for CAS operations. It sets the bounds of flexibility available to FDOs charged with executing it to support the GFC. For example, FDOs need to know what CAS assets they have to work with at any given time. Any changes to the plan must consider the number of distinct assets available. Likewise, careful study of the ATO may reveal that availability of tanker assets is actually the constraining factor during a particular timeframe. FDOs must work within the limits imposed by the ATO, but they should have considerable leeway to apply operational art within those constraints.

Active Pursuit of Improved Situational Awareness

The ASOC requires situational awareness across the span of its area of operations to effectively command and control CAS. The quality of decisions and the rapidity with

which they are made is directly related to the extent of the ASOC's situational awareness. By the fall of 2010, a series of relocations, difficulties associated with release of classified information on coalition networks, and a variety of significant technical issues resulted in the ASOC operating with an unreliable air picture and virtually no ground picture. Numerous workarounds enabled the ASOC to perform its mission. However, these workarounds had two nontrivial impacts. First, they introduced delays into the decision-making process. Second, parts of the ASOC mission were outsourced to other command and control agencies because the ASOC did not always have enough information to make good decisions. Immediate efforts to improve situational awareness enabled the FDOs to reclaim their mission and produce quicker response times.

The issue was not the lack of a common operating picture for the theater. While traveling and establishing relationships throughout the AOR, the FDOs discovered myriad operating pictures at all organizational levels. Interestingly, some of the most complete pictures were available to organizations that did not use or need them to accomplish their missions. Those organizations had the good fortune of available bandwidth, highly skilled interface control personnel, favorable line-of-sight geography, and the right mix of equipment to display high quality real-time overlays of ground and air forces.

Fortunately, Joint Interface Control Officers across both the Army and Air Force are passionate about what they do. At every turn, they worked with the datalink managers at ASOC to apply impressive knowledge and ingenuity toward resolving the issue. The story of how the ASOC collaborated with numerous agencies to improve its access to situational awareness is impressive, but the more important story is what the FDOs did once they had access to the information they needed. The ASOC cannot maximize the advantage it gains from sitting at the intersection of the Army and Air Force command and control systems unless it has good situational awareness of the operations of both components.

Gaining better situational awareness enabled faster CAS response times, but the bulk of the improvement came from how the FDOs used the information—not from simply having a better picture. The improved common operating

picture allowed the ASOC to evolve from a processing node to an active node of the TACS. Rather than waiting for an immediate CAS request to arrive from the field, then consulting with adjacent agencies to determine the appropriate reaction, ASOC crews used their improved situational awareness and the relationships they forged across the campaign to develop a “feel” for their AORs. They began to recognize enemy trends in particular geographic areas, the engagement patterns and tactics of coalition forces, and the likelihood of TIC situations arising from different types of missions. For example, given two air support requests of equal priority, ATO planners must choose which to support based on the information they have available at the time. After the ATO is published, ground forces may generate a mission near the unsupported request that is of lower priority but has a high likelihood of developing into a TIC situation. FDOs can use their knowledge of the battlespace to switch support to the high priority task closer to the new mission. This reduces response time if their intuition about the new mission is correct, while providing the same level of support to ground forces. Armed with this

declared. Ideally, the FDO makes a decision and communicates it directly to the appropriate CAS assets, who then immediately start moving in the correct direction while coordinating the required clearances. The FDO arrives at a pairing decision using the considerable resources resident in his crew, his feel for the battlespace, and the network of relationships available to him because he is collocated with the supported command.

In Afghanistan, CAS aircraft work in assigned areas that can take several minutes to transit, so they usually have time and space to start toward their assigned tasking and attain new airspace clearance before reaching the limits of their current airspace. Excessive consultation introduces delays that result in casualties. Some of the previously described technical difficulties had resulted in an atmosphere where command and control agencies other than the ASOC operated as if the decision to pair assets against a particular CAS request was a collaborative one. Armed with better situational awareness, the FDOs began using their positional authority to expedite CAS response times. Execution of the FDO's decision may well require a collaborative effort but the decision belongs to the FDO. When collaboration is required to notify the assigned aircraft, time spent debating the

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heightened feel for the situation, FDOs began to anticipate events and either develop contingency plans or reposition assets. Because their scope of responsibility was limited to the CAS realm, the feel they developed falls short of “Napoleon's coup d'oeil,” but it certainly contributed to reducing CAS response times. They did not always get it right, but their ability to make the right trade-offs improved rapidly over time. Combining high quality situational awareness with a network of relationships allowed the FDOs to get further ahead of the game and make decisions that put the right assets in the right place at the right time.

Decide and Take Action

Command and control of CAS assets is not for the timid. FDOs need to be decisive and start the process of moving aircraft as quickly as possible when a TIC situation is

decision rather than executing it can prove fatal for the Soldiers who requested CAS.

Increased use of datalink technology reduced the need for collaboration to notify aircraft of their assignments and correspondingly reduced opportunities for this type of delay. ASOC datalink managers were physically located in the midst of the conversation that produces a CAS aircraft tasking. They quickly became so adept at listening to the conversation while simultaneously preparing the ensuing message traffic that the message was digitally sent as the FDO uttered the final syllable of the order. By involving fewer middlemen in a CAS tasking, faster response times are achieved. However, cutting intermediaries out of the execution chain must not be confused with cutting them out of the loop. Because their decisions sometimes affect multiple operations across the area of operations, the ASOC strove to inform the entire command and control system of their decisions as quickly as possible.

In practice, notification of both the aircraft and the entire system often occurred simultaneously by using electronic chat rooms and the datalink architecture.

While this simultaneous notification is admirable, all stakeholders must remain focused on the fact that *pairing CAS aircraft to troops in contact situations is combat command and control not peacetime air traffic control*. Nevertheless, worries about aircrews exceeding their authorized clearances while rushing to respond to their CAS taskings are

actions are complete may reveal a technique to achieve the same result while introducing fewer perturbations into the system.

The FDOs' debrief process was particularly effective for two reasons. First, they made sure they shared their knowledge with all the ASOC crews through formal handover briefs and immediate updates to their operating procedures. This effort ensured lessons *learned* rather than just lessons *observed*. Second, when their actions caused friction with outside agencies, they diligently col-

situational awareness and communications capacity enable decentralized execution of airpower through the ASOC. Conversely, concentrating situational awareness tools and communications ability in rear elements leads to less responsive centralized execution. Empowering FDOs to make decisions and immediately begin executing them reduced response times by eliminating unnecessary postdecision collaboration. Experience showed that combat-seasoned aviators with a broad understanding of the entire command and control system performed best in the FDO role. Time invested in training to familiarize FDOs with adjacent command and control agencies allows them to step into their critical role with confidence. They must arrive in theater with a clear understanding of their role in the command and control system and the confidence to make tough decisions quickly. Robust predeployment training scenarios are the best way to develop this confidence and lead to rapid intuitive decisions that reduce CAS response times. Lastly, taking the time to debrief each engagement thoroughly and document lessons learned built a culture of continuous improvement that incrementally improved response times. Lessons learned must be codified in order to outlast the tenure of those who experience them. While future conflicts will present different challenges, the remarkable improvement in CAS response times that these Airmen generated and how they accomplished it should not be forgotten the next time our country finds itself involved in a conflict. **JFQ**

NOTES

¹ "From Great to Exceptional," *Airforce Magazine.com*, June 1, 2011, available at <www.airforce-magazine.com/Features/airpower/Pages/box060111petraeus.aspx>.

² The author remains incredibly impressed with the leadership and dedication to improving response times displayed by Captains Timothy Scariano, Dave Kelley, Timothy Swierzbis, and Flight Lieutenant Phil Druce.

³ Joint Publication 3-09.3, *Close Air Support* (Washington, DC: The Joint Chiefs of Staff, July 8, 2009).

strong situational awareness and communications capacity enable decentralized execution of airpower through the ASOC

overblown for two reasons. First, geography and airspeed usually conspire to prevent this conflict from arising as aircrews are rarely at the edge of their assigned airspace at the precise second they receive a tasking. In the rare instances when this occurs, highly trained and disciplined CAS aircrews flying the most sophisticated aircraft in the world can safely expedite their arrival overhead in a TIC situation. Their onboard systems, coupled with years of experience and their own situational awareness, minimize any risk they assume. Second, commanders at all levels, from the CFACC to aircraft commanders, take appropriate risks in combat. They do so within the limits of very clear guidance. That guidance, not a peacetime air traffic control mindset, should determine how much risk they assume. Everyone involved with CAS needs to operate with the appropriate urgency and willingness to assume risk consistent with their commander's guidance.

Relentless Debrief

The final line of effort discussed in this article applies to any attempt to improve a system. Changing large systems is not a simple endeavor, and one should learn along the way. The FDOs constantly debriefed their crews' performances as they developed new procedures and mindsets to reduce response times. No aspect of their operation was immune to examination. They set an atmosphere that allowed everyone in their crews to contribute to the improvement process. Some of the most significant lessons learned (and subsequent improvements) arose from examining events with response times under 5 minutes. Successes produce as many lessons as failures. Careful examination of decisions after the

lected the facts and then worked with the appropriate agency to explore better ways to accomplish the task that caused the conflict. Leading change is sometimes a messy process, but taking the time to thoroughly debrief and document required changes both internally and externally contributes to success and ensures that the change endures.

Conclusion

This article highlighted several lines of effort that produced a significant reduction in CAS response times in Afghanistan. Mutual trust arising from strong relationships throughout the command and control system enabled faster actions from all parties. Common predeployment training is the ideal way to establish these relationships. When that is not possible, command and control units should visit adjacent organizations during the deployment process. The FDOs described above altered their routes into theater to visit the CAOCs and the Control and Reporting Centers, then trekked to the MACCS in the early stages of the deployment. The relationships forged in these initial visits paid significant dividends throughout the deployment. Using high fidelity situational awareness to apply operational art to the CAS portions of the ATO improved the effectiveness, efficiency, and response times for CAS operations. In future operations, the command and control system must prioritize providing situational awareness and communications capability to forward elements. That is often more difficult than providing the same capabilities to rear elements, but it allows those closest to the decisionmakers on the GFC's staff to capitalize on that proximity to provide shorter CAS response times. Strong